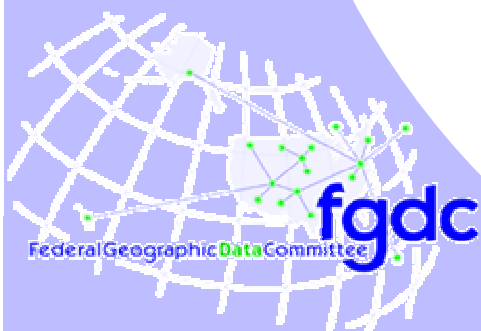


Geospatial Metadata: EME 3.0

Module 1: Using the EPA Metadata Editor (EME) version 3.0



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Training Structure

► EME 3.0 Training Topics

1. Background on newest features
2. EME 3.0 installation requirements
3. Walkthrough of new interface features
4. Specifying a shared database location
5. Customizing the EME table
6. Using the EPA Synchronizer
7. Using the batch validator
8. Considerations/tips for migrating to EME 3.0



Learning Objectives

After completing the intermediate training the student can:

- ▶ Identify requirements for installing EME 3.0
- ▶ Identify considerations when migrating from EME 2.1 to 3.0
- ▶ Describe some of the new EME user interface features
- ▶ Describe how to share the EME database
- ▶ Describe how to use the EPA Synchronizer
- ▶ Describe how to use the EME batch validation functions



It is assumed that the student already:

- ▶ Has a basic understanding of the FGDC CSDGM
- ▶ Has a basic understanding of EME version 2.1
- ▶ Has a basic understanding of the use of metadata synchronizers



Training Structure

Your trainers

- ▶ Jessica Zichichi
 - ▶ jzichichi@innovateteam.com
- ▶ Caroline Roberts
 - ▶ croberts@innovateteam.com

EME Contact Information

- ▶ Michelle Torreano
 - GDG/EME Project Manager & EPA Geospatial Metadata Coordinator
 - torreano.michelle@epa.gov

Additional Resources

- ▶ EME Website
 - <http://www.epa.gov/geospatial/eme.html>

The screenshot shows the Innovate! website with a green header and navigation bar. The main content area is titled "EPA and Partners Geospatial Metadata Training". It includes a description of the project, contact information for Jessica Zichichi, and a list of materials for the sessions. The materials are categorized into Detailed Training Information, Pre-Training Survey, Introductory Presentations, Introductory Samples, Intermediate Presentations, Intermediate Samples, EME 3.0 Presentation, EME 3.0 Samples, and Post-Training Survey. A sidebar on the right lists various EPA and Partners Geospatial Metadata Training resources, including GeoData Gateway (GDG), EPA Metadata Editor (EME), Digital Shoreline Assessment System (DSAS), EPA Geospatial Data Architecture Development, Department of Defense (DoD) Environmental Liability Policy, and Haley and Aldrich Geospatial Support.

<http://innovateteam.com/projects/epa-and-partners-geospatial-metadata-training/>



EME Evolution

Requirements Gathering

- ▶ User testing
- ▶ EME Training Sessions
- ▶ Usage

- ▶ **Common requests**
 - Get from data set
 - User-defined keywords
 - Remove ESRI errors
 - Batch validation
 - Others.....

	A	B	C	D	E	F
1	ID	Component	Change Request	Submitted By	Date	Submitted During
2	1	ESRI Tags	<p>Add a button associated with the Bounding Box field that will pull the actual coordinates from the dataset into the metadata record (xml).</p> <p>Metadata records created completely within the EPA Metadata Editor are given bounding coordinates as selected in the Bounding Box section of Tab 1. The field <bounding> is created in the xml and is populated with the coordinates selected from the dropdown list.</p> <p>Metadata records that are created outside of the EPA ME (using the ArcCatalog update button, for example) are given bounding coordinates in two formats: decimal degrees and the projected or local coordinates (see the ArcCat Metadata "Spatial" tab). These coordinates are maintained in the <bounding> and <lbounding> fields in the xml.</p> <p>If you use ME and modify the Bounding Box section in an xml that has coordinates in <bounding> and <lbounding>, the coordinates in <bounding> will change, but the ones in <lbounding> will not. The EPA Validator reports the <lbounding> field as an error.</p>	Melody Lister	04/20/2007	Testing
3	2	ESRI Tags	<p>I have also noticed that if I edit a file which already has a placeholder theme keyword section from ArcCatalog, et cetera, such as</p> <pre><theme> <themekey> REQUIRED: Reference to a formally registered thesaurus or a similar authoritative source of theme keywords.</themekey> <themekey> REQUIRED: Common-use word or phrase used to describe the subject of the data set.</themekey> </theme></pre>	Dave Smith	04/23/2003	Testing
4	3	ESRI tags	Extraneous process step deletion. Imported metadata often have garbage process steps generated by ESRI (e.g., "dataset copied", "metadata imported"). These routinely need to be deleted, would be good to have a button to delete elements like this.	Harvey Simon	04/18/2007	Testing
5	4	ESRI Tags	Attribute enumerations issue discovered by Kevin Sears when working with the FGDC editor	Kevin Sears	06/05/2007	Usage
6	5	ESRI Tags	If turned on, ArcGIS "create/update metadata" feature causes problems for EPA metadata validator (also, testing shows that copying or moving a dataset using ArcCatalog will still automatically create a partial ESRI metadata record in the new file location even if the "Create" and "Update" Metadata Options checkboxes are turned off)	David Bradford	08/04/2004	Usage
7	6	Other	Seems like a good follow-up activity would be to develop customization documentation.	Harvey Simon	04/18/2007	Testing
8	7	Other	Would be nifty to have a button to export xml, htm and txt versions of the completed metadata record. The NPS metadata extension has this function and I use it a lot.	Harvey Simon	04/18/2007	Testing

User feedback tracking sheet



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EME Evolution

Design

- ▶ Proposed new design to incorporate requests
- ▶ Design review March 2008
- ▶ Requirements finalization April 2008

Development & Release

- ▶ Testing in progress
- ▶ Release planned for October*

Proposed Design – EME

- Tab 2
 - Add space for additional processing steps: this will be changed to a grid to allow for as many as the user desires
 - Allow for individual attribute edits: this will be implemented using a tab for overview and a tab for detailed attributes
 - Include accuracy tier information in horizontal positional accuracy field: this will be implemented as a drop-down for the horizontal accuracy report field; the user can still enter in free text if desired.

The screenshot shows the EPA Metadata Editor interface. It has several tabs: 'Basic Data Set Information', 'Quality, Coordinate System, and Attribute Information', and 'Distribution & Metadata Information'. The 'Quality' tab is active, showing fields for 'Integrity Tests', 'Completeness of Data', 'Horizontal Positional Accuracy', and 'Vertical Positional Accuracy'. The 'Attributes' tab is also visible, showing 'Entity Information' and 'Attribute Information'. The 'Processing Steps' table is at the bottom, with columns for 'Date' and 'Description'. Red arrows from the text on the left point to these specific areas in the interface.

Sample design slide



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EME 3.0 Prerequisites

What are they?

- ArcGIS 9.2 **Service Pack 2**
- .Net Feature for ArcGIS
- Microsoft .Net Framework 2.0



EME 3.0 Prerequisites

How do I identify if I have them?

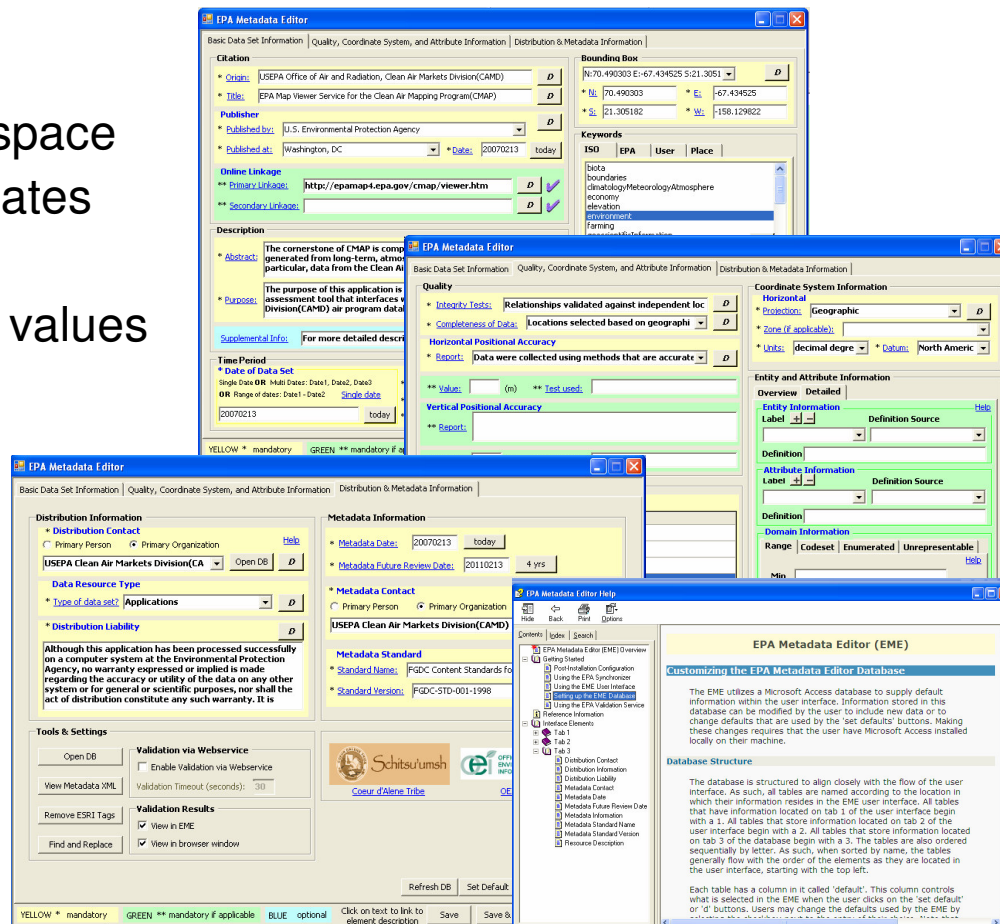
- ArcGIS 9.2 SP 2: ESRI service pack finder
 - <http://support.esri.com/index.cfm?fa=downloads.patchesServicePacks.viewPatch&PID=43&MetaID=980#idsp>
 - **ServicePackFinder90.exe**
- .Net Feature for ArcGIS
 - [C:\Program Files\ArcGIS\DotNet directory](#)
- Microsoft .Net Framework 2.0
 - [Start->Control Panel->Add/Remove Programs](#)



Brief Walkthrough of New Features

Key New Interface Features:

- ▶ Individual default setters
- ▶ Pop-up window for additional space
- ▶ Multiple dates and ranges of dates
- ▶ User keywords
- ▶ Horizontal positional accuracy values
- ▶ Save without close
- ▶ Detailed attributes section
- ▶ Global search and replace
- ▶ Remove ESRI tags
- ▶ Additional help information
- ▶ Validation results



Brief Walkthrough of New Features

New Interface Features

Default Setters

The screenshot shows the EPA Metadata Editor window with several tabs: Basic Data Set Information, Quality, Coordinate System, and Attribute Information, and Distribution & Metadata Information. The Basic Data Set Information tab is active, showing fields for Citation, Publisher, Online Linkage, Description, Time Period, Bounding Box, Keywords, Data Set Constraints, and Contact. Annotations with red arrows point to specific features:

- Default Setters:** Points to the 'D' (Default) buttons next to the Origin, Title, Publisher, and Bounding Box fields.
- User Keywords:** Points to the 'User' tab in the Keywords section, which lists terms like biota, boundaries, climatology, etc.
- Pop-up Text Box:** Points to the 'Abstract' field in the Description section, which contains text about CMAP.
- Multiple Dates:** Points to the 'Date of Data Set' field in the Time Period section, which shows a date range (20070213 to today).

At the bottom of the window, there is a legend: YELLOW * mandatory, GREEN ** mandatory if applicable, BLUE optional. Below the legend are buttons: Refresh DB, Set Default, Spell Check, Validate EPA, Save, Save & Close, Cancel, and Help.

Pop-up Text Box

Multiple Dates

User Keywords



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Brief Walkthrough of New Features

New Interface Features

Accuracy Tiers

Detailed Attributes

Processing Steps

The screenshot shows the EPA Metadata Editor window with the following sections:

- Quality:** Includes Integrity Tests, Completeness of Data, Horizontal Positional Accuracy, and Vertical Positional Accuracy.
- Coordinate System Information:** Includes Horizontal (Projection, Zone, Units, Datum) and Vertical (Datum) information.
- Entity and Attribute Information:** Includes Overview and Detailed tabs for Entity and Attribute Information, and Domain Information.
- Processing Steps:** A table showing the history of processing steps.

Date	Description
2007	Unknown
2008	Dataset moved.
2008	Dataset copied.

YELLOW * mandatory GREEN ** mandatory if applicable BLUE optional Click on text to link to element description Save Save & Close Cancel Help



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Brief Walkthrough of New Features

New Interface Features

The screenshot shows the EPA Metadata Editor application with the following sections:

- Tabs:** Basic Data Set Information, Quality, Coordinate System, and Attribute Information, Distribution & Metadata Information (selected).
- Distribution Information:**
 - * Distribution Contact:** Radio buttons for Primary Person and Primary Organization (selected). A dropdown menu shows "USEPA Clean Air Markets Division(CA)". Buttons: Open DB, D.
 - Data Resource Type:** * Type of data set? Applications (dropdown). Button: D.
 - * Distribution Liability:** Button: D.
 - Disclaimer:** Although this application has been processed successfully on a computer system at the Environmental Protection Agency, no warranty expressed or implied is made regarding the accuracy or utility of the data on any other system or for general or scientific purposes, nor shall the act of distribution constitute any such warranty. It is
- Metadata Information:**
 - * Metadata Date:** 20070213 (text) | today (button)
 - * Metadata Future Review Date:** 20110213 (text) | 4 yrs (button)
 - * Metadata Contact:** Radio buttons for Primary Person and Primary Organization (selected). A dropdown menu shows "USEPA Clean Air Markets Division(CAMD)". Buttons: Open DB, D.
 - Metadata Standard:**
 - * Standard Name: FGDC Content Standards for Digital Geospatial Metadat
 - * Standard Version: FGDC-STD-001-1998. Button: D.
- Tools & Settings:**
 - Buttons: Open DB, View Metadata XML, Remove ESRI Tags, Find and Replace.
 - Validation via Webservice:**
 - ☐ Enable Validation via Webservice
 - Validation Timeout (seconds): 30
 - Validation Results:**
 - ☒ View in EME
 - ☒ View in browser window
- Logos:** Schitsu'umsh, Coeur d'Alene Tribe, OEI, EPA.
- Footer:**
 - Legend: YELLOW * mandatory, GREEN ** mandatory if applicable, BLUE optional.
 - Buttons: Refresh DB, Set Default, Spell Check, Validate EPA, Save, Save & Close, Cancel, Help.
 - Text: Click on text to link to element description.

Remove
ESRI Tags

Global
Search &
Replace

Validation
Settings



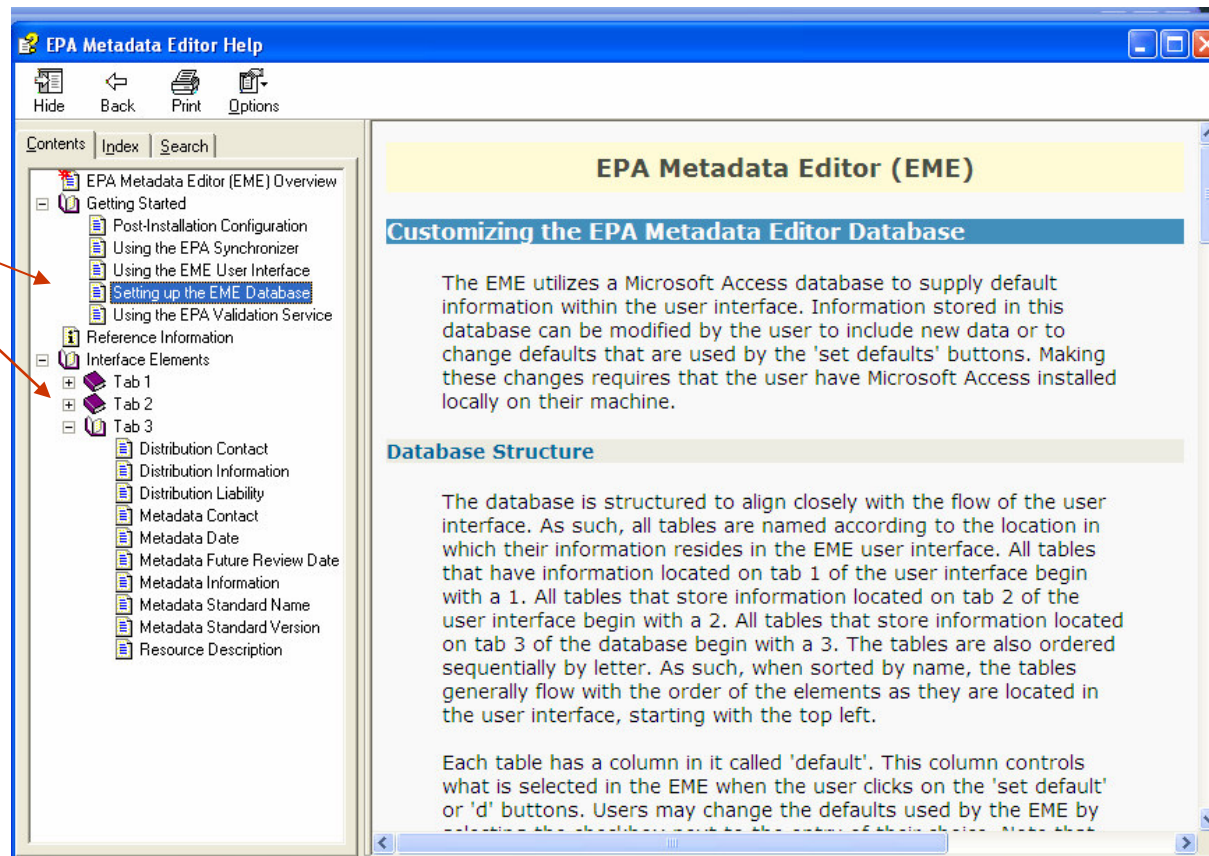
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Brief Walkthrough of New Features

New Interface Features

New Help Topics



Brief Walkthrough of New Features

New Interface Features

Validation
Results

The screenshot displays a web-based metadata form with three tabs: 'Basic Data Set Information', 'Quality, Coordinate System, and Attribute Information', and 'Distribution Information'. The 'Distribution Information' tab is active. It contains three main sections, each with a red error icon: 'Distribution Contact', 'Data Resource Type', and 'Distribution Liability'. The 'Distribution Contact' section has radio buttons for 'Primary Person' and 'Primary Organization' (selected), a dropdown menu showing 'U.S. Environmental Protection Agency', and buttons for 'Open DB' and 'D'. The 'Data Resource Type' section has a dropdown menu with 'Type of data set?' and a 'D' button. The 'Distribution Liability' section has a 'D' button. To the right, a 'Metadata Information' panel is partially visible. A yellow error message box at the bottom states: 'Error : EPA requires the 'distliab' element: Distribution liability.' Red arrows point from the text labels 'Validation Results' and 'Validation Error Message' to the error icon and the error message box, respectively.

Validation
Error
Message



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Demonstration

EPA Metadata Editor

Basic Data Set Information | Quality, Coordinate System, and Attribute Information | Distribution & Metadata Information

Citation

* Origin: USEPA Office of Air and Radiation, Clean Air Markets Division(CAMD) D

* Title: EPA Map Viewer Service for the Clean Air Mapping Program(CMAP) D

Publisher

* Published by: U.S. Environmental Protection Agency D

* Published at: Washington, DC * Date: 20070213 today

Online Linkage

** Primary Linkage: <http://epamap4.epa.gov/cmap/viewer.htm> D ✓

** Secondary Linkage: D ✓

Description

* Abstract: The cornerstone of CMAP is comprehensive atmospheric datasets generated from long-term, atmospheric monitoring networks. In particular, data from the Clean Air Status and Trends Network

* Purpose: The purpose of this application is to provide a web-based GIS assessment tool that interfaces with EPA's Clean Air Markets Division(CAMD) air program database. CMAP offers users an

Supplemental Info: For more detailed description and instruction about CMAP's f

Time Period

* Date of Data Set D

Single Date OR Multi Dates: Date1, Date2, Date3

OR Range of dates: Date1 - Date2 [Single date](#)

20070213 today

* Progress of data: In work

* Data currency: publication date

* Update frequency: As needed

Bounding Box

N:70.490303 E:-67.434525 S:21.3051 D

* N: 70.490303 * E: -67.434525

* S: 21.305182 * W: -158.129822

Keywords

ISO EPA User Place

biota
boundaries
climatology/Meteorology/Atmosphere
economy
elevation
environment
farming
geoscientificInformation
health D

Data Set Constraints

* Access: None. D

* Use: None. Please check sources, s D

* Security Classification: No Confidentiality (from D

Contact

☐ Primary Person ☒ Primary Organization

USEPA | Gary Lear (from metadata record) D

Open DB D

Refresh DB Set Default Spell Check Validate EPA

YELLOW * mandatory GREEN ** mandatory if applicable BLUE optional Click on text to link to element description Save Save & Close Cancel Help



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Questions?



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Specifying a New Database Location

Default EME database location

- ▶ **C:\Program Files\Innovate! Inc\EPA Metadata Editor\metadata.mdb**

Configure the database location

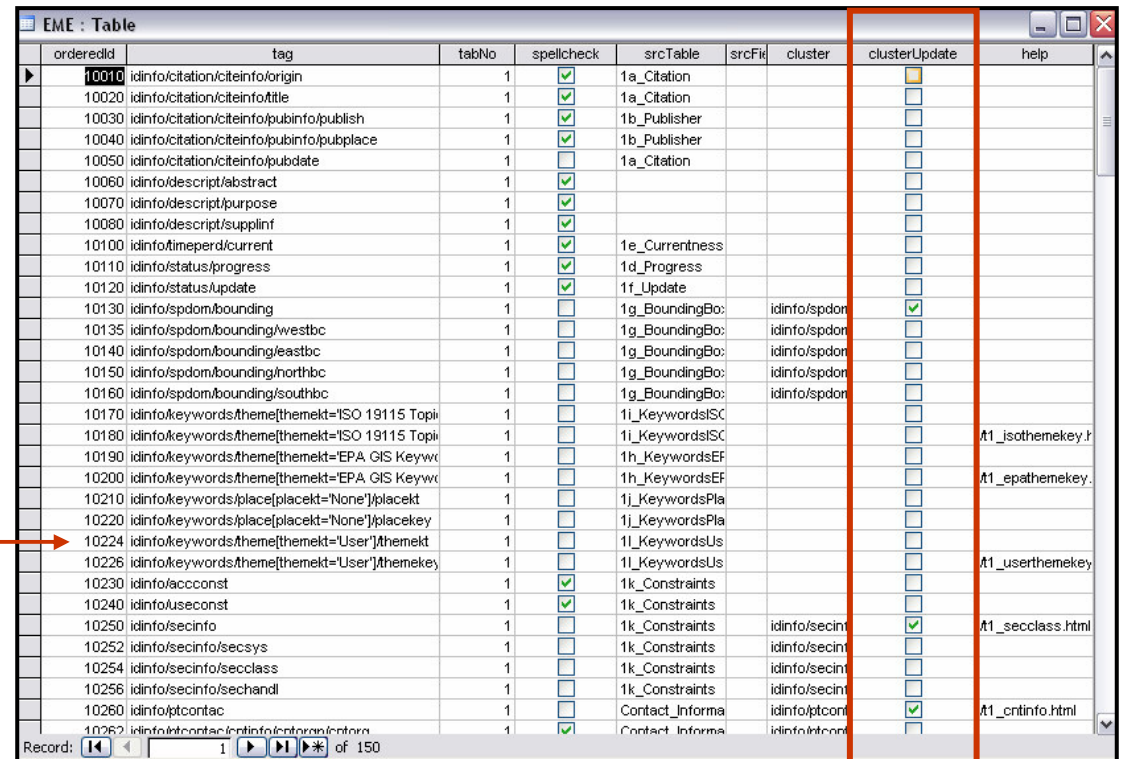
- ▶ Make sure ArcCatalog and the EME are closed
- ▶ Navigate to installation director (usually "C:\Program Files\Innovate! Inc\EPA Metadata Editor")
- ▶ Open config.xml
- ▶ Find the MdbFilepathname setting
- ▶ Change to your new location
- ▶ Close config.xml file



Making Changes to the EME Table

The EME Table

- ▶ User Keyword Thesaurus
- ▶ Compound Element Behavior



orderedid	tag	tabNo	spellcheck	srcTable	srcFile	cluster	clusterUpdate	help
10010	idinfo/citation/citeinfo/origin	1	✓	1a_Citation			<input type="checkbox"/>	
10020	idinfo/citation/citeinfo/title	1	✓	1a_Citation			<input type="checkbox"/>	
10030	idinfo/citation/citeinfo/pubinfo/publish	1	✓	1b_Publisher			<input type="checkbox"/>	
10040	idinfo/citation/citeinfo/pubinfo/pubplace	1	✓	1b_Publisher			<input type="checkbox"/>	
10050	idinfo/citation/citeinfo/pubdate	1	✓	1a_Citation			<input type="checkbox"/>	
10060	idinfo/descript/abstract	1	✓				<input type="checkbox"/>	
10070	idinfo/descript/purpose	1	✓				<input type="checkbox"/>	
10080	idinfo/descript/supplint	1	✓				<input type="checkbox"/>	
10100	idinfo/timeperd/current	1	✓	1e_Currentness			<input type="checkbox"/>	
10110	idinfo/status/progress	1	✓	1d_Progress			<input type="checkbox"/>	
10120	idinfo/status/update	1	✓	1f_Update			<input type="checkbox"/>	
10130	idinfo/spdom/bounding	1	✓	1g_BoundingBo:		idinfo/spdom	<input checked="" type="checkbox"/>	
10135	idinfo/spdom/bounding/westbc	1	✓	1g_BoundingBo:		idinfo/spdom	<input type="checkbox"/>	
10140	idinfo/spdom/bounding/leastbc	1	✓	1g_BoundingBo:		idinfo/spdom	<input type="checkbox"/>	
10150	idinfo/spdom/bounding/northbc	1	✓	1g_BoundingBo:		idinfo/spdom	<input type="checkbox"/>	
10160	idinfo/spdom/bounding/southbc	1	✓	1g_BoundingBo:		idinfo/spdom	<input type="checkbox"/>	
10170	idinfo/keywords/themekt=ISO 19115 Topi	1	✓	1i_KeywordsISC			<input type="checkbox"/>	
10180	idinfo/keywords/themekt=ISO 19115 Topi	1	✓	1i_KeywordsISC			<input type="checkbox"/>	A1_isothemekey.f
10190	idinfo/keywords/themekt=EPA GIS Keywc	1	✓	1h_KeywordsEF			<input type="checkbox"/>	
10200	idinfo/keywords/themekt=EPA GIS Keywc	1	✓	1h_KeywordsEF			<input type="checkbox"/>	A1_epathemekey.
10210	idinfo/keywords/place[placekt=None]/placekt	1	✓	1j_KeywordsPla			<input type="checkbox"/>	
10220	idinfo/keywords/place[placekt=None]/placekey	1	✓	1j_KeywordsPla			<input type="checkbox"/>	
10224	idinfo/keywords/themekt=User/themekt	1	✓	1l_KeywordsUs			<input type="checkbox"/>	
10226	idinfo/keywords/themekt=User/themekt	1	✓	1l_KeywordsUs			<input type="checkbox"/>	A1_userthemekey
10230	idinfo/acconst	1	✓	1k_Constraints			<input type="checkbox"/>	
10240	idinfo/useconst	1	✓	1k_Constraints			<input type="checkbox"/>	
10250	idinfo/secinfo	1	✓	1k_Constraints		idinfo/secint	<input checked="" type="checkbox"/>	A1_secclass.html
10252	idinfo/secinfo/secsys	1	✓	1k_Constraints		idinfo/secint	<input type="checkbox"/>	
10254	idinfo/secinfo/secclass	1	✓	1k_Constraints		idinfo/secint	<input type="checkbox"/>	
10256	idinfo/secinfo/sechandl	1	✓	1k_Constraints		idinfo/secint	<input type="checkbox"/>	
10260	idinfo/ptcontac	1	✓	Contact_Informa		idinfo/ptcont	<input checked="" type="checkbox"/>	A1_cntinfo.html
10262	idinfo/ptcontac	1	✓	Contact_Informa		idinfo/ptcont	<input type="checkbox"/>	

Other New Tables

- ▶ User Keywords
- ▶ Horizontal Positional Accuracy

You must re-open ArcCatalog whenever you change something in the EME table

Questions?

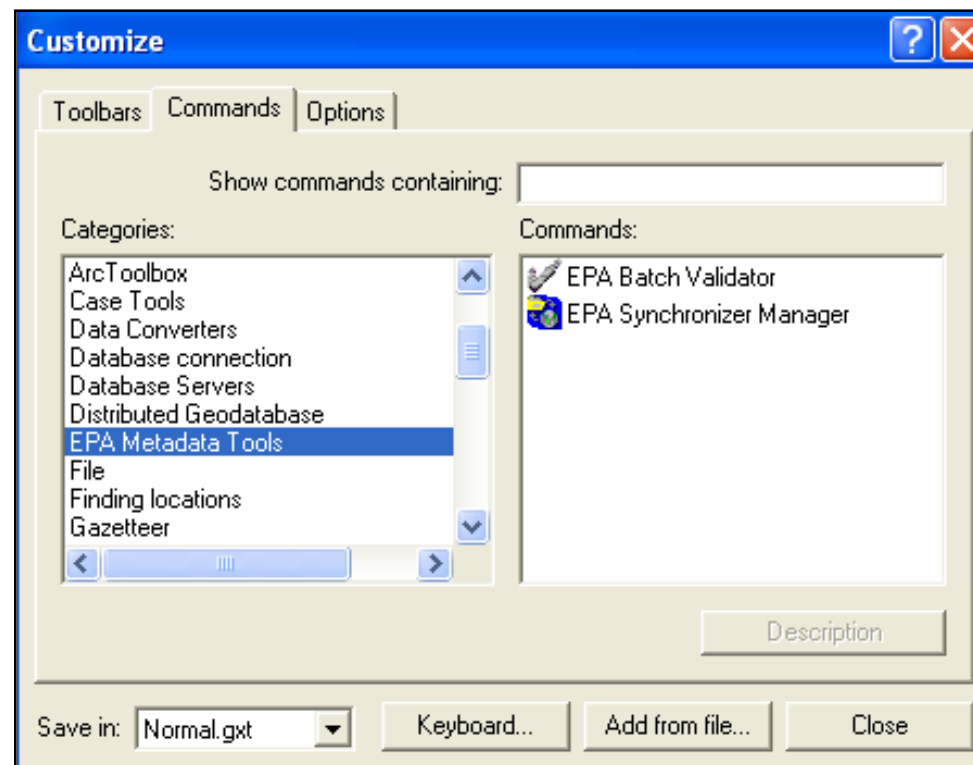


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Adding New EME Buttons

EPA Synchronizer and Batch Validator



Using the EPA Synchronizer

Configure the EPA Synchronizer

- ▶ **Select Synchronizers Tab:** Uncheck all synchronizers except the EPA Synchronizer
- ▶ **EPA Sync Settings Tab:** Specify Attributes, Coordinate System, Online Linkage, Bounding Box AND Remove ESRI Tags
- ▶ Turn Synchronizers back on

Select source file in ArcCatalog

- ▶ Notice information added/modified in the record



Questions?



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Batch Validation

EPA Metadata Editor v3 – Validation Results	
SUMMARY	26 error(s), 4 warning(s).
TYPE	Error
DESCRIPTION	EPA requires the 'pubinfo' element: Publication information.
LINE NO	
PATH	/metadata/idinfo/citation/citeinfo/pubinfo
TYPE	Error
DESCRIPTION	EPA requires the 'secinfo' element: Security information.
LINE NO	
PATH	/metadata/idinfo/secinfo
TYPE	Error
DESCRIPTION	EPA requires the 'keywords' element: keywords for EPA and Geo One-stop use.
LINE NO	
PATH	/metadata/idinfo/keywords
TYPE	Error
DESCRIPTION	EPA requires the 'dataqual' element: a general assessment of the quality of the data set.
LINE NO	
PATH	/metadata/dataqual
TYPE	Error
DESCRIPTION	EPA requires the 'spref' element: descriptions of the reference frame for, and the means to encode, coordinates in the data set.



Migrating to the New EME

Considerations for using or migrating to the new EME

- ▶ If you will be sharing the database, have one person apply your defaults to the db in the shared location
- ▶ You can also modify your configuration file and send it to everyone to help users share the same db
- ▶ Think about the edits you'd like to make in the EME table and make them first
- ▶ Set up your EPA Synchronizer!
- ▶ Back up your metadata.mdb file if you have made lots of edits to your 2.1 version



More Additional Resources

EME Website

- ▶ <http://www.epa.gov/geospatial/eme.html>

Metaparser

- ▶ <http://geo-nsdi.er.usgs.gov/validation/>
- ▶ <http://geology.usgs.gov/tools/metadata/>

FGDC CSDGM Graphical Image Map

- ▶ <http://www.fgdc.gov/csdgmgraphical/index.html>

Metadata Toolbox Help Information

- ▶ <http://support.esri.com/index.cfm?fa=downloads.geoprocessing.filteredGateway&GPID=13>

ESRI's EDN site (for additional custom tools)

- ▶ <http://edn.esri.com>



Questions?



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Thank you!

Thank you for your time!

Your trainers

- ▶ Jessica Zichichi
 - ▶ jzichichi@innovateteam.com
- ▶ Caroline Roberts
 - ▶ croberts@innovateteam.com

EME Contact Information

- ▶ Michelle Torreano
 - GDG/EME Project Manager & EPA Geospatial Metadata Coordinator
 - torreano.michelle@epa.gov

EME Website

- ▶ <http://www.epa.gov/geospatial/eme.html>

The screenshot shows the Innovate! website with a green header and navigation bar. The main content area is titled "EPA and Partners Geospatial Metadata Training". It includes a description of the project, contact information for a web conference, and a list of materials for the sessions. A sidebar on the right lists various EPA and Partners Geospatial Metadata Training resources.

Innovate! A premier provider of innovative government consulting services.

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EPA and Partners Geospatial Metadata Training

The EPA and Partners Geospatial Metadata Project will provide metadata training and instruction for EPA's geospatial community, other federal agencies, state agencies, tribes, and additional groups (e.g., organizations, academia, local government agencies, and/or private companies). Any interested party is invited to join.

Web Conference and Teleconference Information:
Web Conference URL: <http://portal.epa.gov/webconference>
Conference Key: 2774
Teleconference Phone Number: 1-712-432-7308
Participant Code: 92696#

Materials for the sessions will be made available below
(click on those shown in orange to view/download)

- Detailed Training Information
- Pre-Training Survey
- Introductory Presentations
 - Module 1
 - Module 2
 - Module 3
 - Module 4
- Introductory Samples
- Intermediate Presentations
 - Module 1
 - Module 2
 - Module 3
- Intermediate Samples
- EME 3.0 Presentation
- EME 3.0 Samples
- Post-Training Survey

Please contact Jessica Zichichi at jzichichi@innovateteam.com if you have any questions.

[Edit this page](#)

EPA and Partners Geospatial Metadata Training

- GeoData Gateway (GDG)
- EPA Metadata Editor (EME)
- Digital Shoreline Assessment System (DSAS)
- EPA Geospatial Data Architecture Development
- Department of Defense (DoD) Environmental Liability Policy
- Halley and Aldrich Geospatial Support

<http://innovateteam.com/projects/epa-and-partners-geospatial-metadata-training/>

Post-training Surveys!



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